

REMARKS

This paper responds to the Office Action mailed on February 26, 2007.

Claim 41 is amended, claims 47 and 48 are added; as a result, claims 1-6, 13-22, 29-32, 38, 40-43, 47 and 48 are now pending in this application.

§102 Rejection of the Claims

Claims 41-42 were rejected under 35 USC § 102(e) as being anticipated by Chen et al. (U.S. 2004/0125565 A1, hereinafter Chen 2004).

Applicant respectfully traverses for at least the reasons presented below.

Independent claim 41 is amended and recites, among other things, "a plurality of first nanostructures attached to the thermal management device" and "a plurality of second nanostructures attached to the heat source, wherein the first nanostructures includes protrusions, wherein the second nanostructures includes recesses, wherein the recesses of the second nanostructures are disposed in a pattern to receive the protrusions of the first plurality of the nanostructures".

The Office Action compares interface 40 of Chen 2004 to both the plurality of first nanostructures and the plurality of second nanostructures of claim 41. However, as shown in FIG. 1 and described in paragraph 0012 of Chen 2004, interface 40 utilizes *a* (single and not first and second) plurality of nanocapsules. Since the Office Action compares interface 40 of Chen 2004 to both of the plurality of first nanostructures and the plurality of second nanostructures of claims 1 and since interface 40 utilizes *a* plurality of nanocapsules, Applicant submits that either a first plurality of nanostructures or a second plurality of nanostructures is missing from Chen 2004. Further, Applicant is unable to find in Chen 2004 a teaching or fair suggestion that interface 40 of Chen 2004 can include a plurality of first nanostructures *and* a plurality of second nanostructures.

Moreover, even if a plurality of first nanostructures *and* a plurality of second nanostructures can somehow be found in Chen 2004, Applicant is unable to find in Chen 2004 a teaching or fair suggestion that the first nanostructures (if found in Chen) can include protrusions, and that the second nanostructures (if found in Chen 2004) can include recesses.

In addition, if protrusions and recesses can somehow be found in Chen, Applicant is unable to find in Chen 2004 a teaching or fair suggestion that the recesses of the second nanostructures are disposed in a pattern to receive the protrusions of the first plurality of the nanostructures.

The reasons presented above demonstrate that claim 41 is not anticipated by Chen 2004. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 41. Dependent claim 42 depends from claim 41 and recites the things of claim 41. Applicant believes that claim 42 is not anticipated by Chen 2004 for at least the reasons presented above regarding claim 41, plus the additional things recited in claim 42. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 42.

§103 Rejection of the Claims

Claims 1-3, 6, 13, 30, 31, and 40 were rejected under 35 USC § 103(a) as being unpatentable over Chen 2004 in view of Edman et al. (U.S. 7,060,224 B2, hereinafter referred to as Edman).

Applicant respectfully traverses for at least the reasons presented below.

Each of the independent claims 1, 13, 30, and 40 recites an interface disposed between a thermal management device and a heat source, the interface including a plurality of nanostructures with a plurality of polymer molecules in which the polymer molecules include deoxyribonucleic acid (DNA) molecules. The Office Action admits that Chen 2004 fails to disclose polymer molecules including DNA molecules. The Office Action asserts that a second art, Edman, teaches nanostructure using DNA. The Office Action, page 4, relies on Edman's col. 26 lines 15-25 and states that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Edman's teaching into Searls device at least to selectively glue together parts (Applicant assumes that on page 4 and on other pages of the Office Action, the Office Action meant Chen 2004 instead of Searls). Applicant respectfully disagrees. Col. 26 lines 15-25 of Edman does not mention anything about an interface disposed between a thermal management device and a heat source. As mentioned above, the Office Action admits that Chen 2004 fails to disclose polymer molecules include DNA molecules. Applicant is unable to find in Chen 2004 and Edman a teaching or fair suggestion to combine

Chen 2004 and Edman, as proposed by the Office Action, to achieve the things recited in claims 1, 13, 30, and 40. For example, Applicant is unable to find in both Chen 2004 and Edman (without the benefit of reviewing the present application) a teaching or fair suggestion of an interface disposed between a thermal management device and a heat source, the interface including a plurality of nanostructures with a plurality of polymer molecules in which the polymer molecules include. If the Office Action maintains the rejection based on the proposed combination of Chen 2004 and Edman, Applicant respectfully requests the Office Action specifically pointing out where in Chen 2004 and Edman a teaching or fair suggestion of an interface disposed between a thermal management device and a heat source, the interface including a plurality of nanostructures with a plurality of polymer molecules in which the polymer molecules include DNA molecules.

The reasons presented above demonstrate that claims 1, 13, 30, and 40 are patentable over Chen 2004 and Edman. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 1, 13, 30, and 40 and dependent claims 2, 3, 6, and 31.

Claims 4-5 and 32 were rejected under 35 USC § 103(a) as being unpatentable over Chen 2004 and Edman in view of Chen et al. (U.S. 2005/0059238 A1, hereinafter referred to as Chen 2005).

Applicant respectfully traverses for at least the reasons presented below.

Claims 4-5 and 32 depend from claims 1 and 30. Thus, for at least the reasons presented above regarding claims 1 and 30, Applicant believes that claims 4-5 and 32 are patentable over Chen 2004/Edman/Chan 2005, plus the things recited in claims 4-5 and 32. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 4-5 and 32.

Claims 14, 38, and 43 were rejected under 35 USC § 103(a) as being unpatentable over Chen 2004 in view of Fan et al. (U.S. 6,924,335 B2, hereinafter Fan).

Applicant respectfully traverses for at least the reasons presented below.

Dependent claim 14 depend from claim 13 and dependent claim 38 depends from claim 30, thus each of the claims 14 and 38 also recites the things of claims 1 and 10 such as the polymer molecules including "deoxyribonucleic acid (DNA) molecules". Applicant is unable to find in Chen 2004 and Fan a teaching or fair suggestion of as a polymer molecules including

DNA molecules. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 14 and 38.

Dependent claim 43 depends from independent claim 41. Thus, for at least the reasons presented above regarding claim 41, Applicant believes that claim 43 is patentable over Chen 2004 and Fan, plus the things recited in claim 43. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 43.

Claims 15, 17-19, 22, and 29 were rejected under 35 USC § 103(a) as being unpatentable over Prasher et al. (U.S. 2005/0105272 A1, hereinafter referred to as Prasher) in view of Chen 2004 and further in view of Edman.

Claim 16 was rejected under 35 USC § 103(a) as being unpatentable over Prasher, Chen 2004, and Edman as applied to claims 15 and 18 above, and further in view of Tobita et al. (U.S. 6,730,731 B2).

Claims 20-21 were rejected under 35 USC § 103(a) as being unpatentable over Prasher, Chen 2004, and Edman as applied to claims 15 and 18 above, and further in view of Chen 2005.

Applicant respectfully traverses for at least the reasons presented below.

Prasher is used as one of the references to reject claims 15-22 and 29 (as listed above).

Applicant submits that Prasher is not a reference against the present application in accordance with 35 USC § 103(c) regarding common ownership.

MPEP section 706.02(l)(2) states that the following statement is sufficient evidence to establish common ownership of, or an obligation for assignment to, the same person(s) or organizations(s):

Applications and references (whether patents, patent applications, patent application publications, etc.) will be considered by the examiner to be owned by, or subject to an obligation of assignment to the same person, at the time the invention was made, if the applicant(s) or an attorney or agent of record makes a statement to the effect that the application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person.

Applicant makes such a statement with regard to the present application and Prasher (U.S. 2005/0105272 A1). Specifically, applicant states that at the time the inventions were

made, the present application and Prasher were owned by or subject to an obligation of assignment to Intel Corporation.

As Applicant has met the requirements of MPEP 706.02(l)(2), Applicant requests withdrawal of the rejection under 35 USC § 103(a) in accordance with 35 USC § 103(c).

New Claims

Applicant believes that new claims 47 and 48 are patentable over the cited art. Accordingly, Applicant requests consideration and allowance of claims 47 and 48.

RESERVATION OF RIGHTS

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 373-6969) to facilitate prosecution of this application.


If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

ERIC C. HANNAH ET AL.

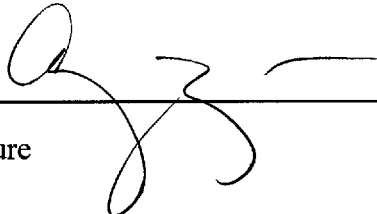
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 29th day of May 2007.

Amy Moriarty
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Signature